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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,244	02/24/2004	Ludger Mimberg	NVID-P001166	2724

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EXAMINER

SMITH, TYRONE W

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/786,244

Applicant(s)

MIMBERG, LUDGER

Examiner

Tyrone W. Smith

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 25 and 26 objected to because of the following informalities: The limitation states, "generating comprises generating said pulse width modulation signal as a function of a fan speed signal." Examiner request changes made to the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 23 and 24 rejected under 35 U.S.C. 102(b) as being anticipated by Admitted Prior Art of Record (Figure 3).

Regarding Claims 1, 2, 23 and 24. Admitted Prior Art of Record (Figure 3) discloses a pulse width modulation generator (Figure 3 item 310) for generating a pulse width modulation signal and a drive stage circuit (Figure 3 item 320 and 330) coupled to the pulse width modulation generator and for switch mode converting a supply voltage into a linear voltage for

driving a fan, wherein a voltage level of said linear voltage is a function of a pulse width modulation signal. Refer to the Applicant's specification on page 4 section [0008].

4. Claims 1, 2, 4 and 23, 24, 26 rejected under 35 U.S.C. 102(e) as being anticipated by Vyssotski et al (6650074).

Regarding Claims 1, 2, 23 and 24. Vyssotski discloses a fan speed controller with conditioning tachometer signal which includes a pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) for generating a pulse width modulation signal and a drive stage circuit (Figures 3 and 5 item 62) coupled to the pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) and for switch mode converting a supply voltage into a linear voltage for driving a fan, wherein a voltage level of the linear voltage is a function of a pulse width modulation signal (column 8 lines 5 lines 5-58).

Regarding Claim 4. Vyssotski discloses a tachometer or speed sensor (Figure 3 item 64) connected to the fan motor (Figures 3 and 5 item 46) and PWM generator (Figures 3 and 5 item 44).

Regarding Claim 26. Vyssotski discloses the PWM generator (Figures 3 and 5 item 44; column 7 lines 5-42) generating a PWM signal as a function of the fan speed signal (Figure 3 item 64).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-10, 12-14 and 16-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Vyssotski et al (6650074) in view of Cheng et al (6853569).

Regarding Claims 5-22. Vyssotski discloses a fan speed controller with conditioning tachometer signal which includes a pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) for generating a pulse width modulation signal and a drive stage circuit (Figures 3 and 5 item 62) coupled to the pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) and for switch mode converting a supply voltage into a linear voltage for driving a fan, wherein a voltage level of the linear voltage is a function of a pulse width modulation signal (column 8 lines 5 lines 5-58). However, Vyssotski does not disclose the structure of the drive stage as disclosed in claims 5 and 8.

Cheng discloses a DC-to-DC converter, which can be used as a drive stage, with a first transistor (Figure 1, 3 and 4 item 4) having a gate for receiving the pulse width modulation signal and a source coupled to a first potential; a current shunting element (Figure 1, 3 and 4 item 5) having a first terminal coupled to a drain of the first transistor and a second terminal coupled to a second potential; a capacitor (Figure 1, 3 and 4 item 13) having a first terminal coupled to the second terminal of the current shunting element, and an inductor (Figure 1, 3 and 4 item 14) having a first terminal coupled to a second terminal of the capacitor and a second terminal coupled to said first terminal of said current shunting element and to the drain of the first transistor. The capacitor is coupled to the output (across) of the systems (Figure 1 item 15).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the drive stage concept of Cheng with Vyssotski's a fan speed controller with conditioning tachometer signal. The advantage of combining the two would provide a system that provides

bi-directional power flow of DC-to-DC converters that gives double or halved voltage or inverted voltage according to the power flow direction of the circuits.

Regarding Claims 6, 7 and 18-22. M.P.E.P. Chapter 2144.05 Optimum Ranges Optimization Within Prior Art Conditions or Through Routine Experimentation: B. Only Result-Effective Variables Can Be Optimized: A particular parameter must first be recognized as a result-effective variable, i.e., a variable, which achieves a recognized result, before the determination of the optimum or workable ranges of, said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result-effective variable.). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

It would have been obvious to one of ordinary skill in the art at the time of invention to use different ranges in the invention. Examiner believes, within the scope of case law, that the ranges used in the invention, which provide no new and recognized result, can be adjusted according to the meet the needs and results of the inventor(s).

Regarding Claims 9 and 10. Cheng discloses a DC-to-DC converter, which can be used as a drive stage, current shunting element comprises a diode (Figures 1, 3 and 4 item 8) having an anode coupled to the drain of the first transistor and to the second terminal of the inductor, and a cathode coupled to the second potential and to the first terminal of the capacitor (Figures 1, 3 and 4 item 8) or current shunting element comprises a second transistor (Figure 1, 3 and 4 item 5) having a gate for receiving a complement of the pulse width modulation signal, a source

coupled to the drain of the first transistor and to the second terminal of the inductor, and a drain coupled to the second potential and to the first terminal of the capacitor.

It would have been obvious to one of ordinary skill in the art at the time of invention to use the drive stage concept of Cheng with Vyssotski's a fan speed controller with conditioning tachometer signal. The advantage of combining the two would provide a system that provides bi-directional power flow of DC-to-DC converters that gives double or halved voltage or inverted voltage according to the power flow direction of the circuits.

Regarding Claims 13, 14 and 16. Vyssotski discloses a fan speed controller with a speed sensor (Figures 3 and 5 item 64) having an input coupled to an output of the fan and an output coupled to an input of the PWM generator (Figures 3 and 5 item 44; column 7 lines 5-42).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the drive stage concept of Cheng with Vyssotski's a fan speed controller with conditioning tachometer signal. The advantage of combining the two would provide a system that provides bi-directional power flow of DC-to-DC converters that gives double or halved voltage or inverted voltage according to the power flow direction of the circuits.

7. Claims 3 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Vyssotski et al (6650074) in view of Saito et al (JP57-097397).

Regarding Claims 3 and 25. Vyssotski discloses a fan speed controller with conditioning tachometer signal which includes a pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) for generating a pulse width modulation signal and a drive stage circuit (Figures 3 and 5 item 62) coupled to the pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) and for switch mode converting a supply voltage into a linear voltage for driving a fan, wherein a voltage level of the linear voltage is a function of a pulse width

modulation signal (column 8 lines 5 lines 5-58). However, Vyssotski does not disclose a thermal monitor with an output coupled to an output of the PWM generator.

Saito discloses a driving device for variable speed motor, which includes a thermal monitor (Figure 2 items 18 and 19) with an output coupled to an output of the PWM generator (Figure 2 item 22).

It would have been obvious to one of ordinary skill in the art at the time of invention to add Saito's a driving device for variable speed motor to Vyssotski's a fan speed controller with conditioning tachometer signal. The advantage of combining the two would control a main and a fan driving motor is response to the environmental temperature of the mail motor by providing a high temperature sensor and a low temperature sensor performing specific operations.

8. Claims 11 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Vyssotski et al (6650074) in view of Cheng et al (6853569) as applied to claims 5-10, 12-14 and 16-22 above, and further in view of Saito et al (JP57-097397).

Regarding Claims 11 and 15. Vyssotski discloses a fan speed controller with conditioning tachometer signal which includes a pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) for generating a pulse width modulation signal and a drive stage circuit (Figures 3 and 5 item 62) coupled to the pulse width modulation generator (Figures 3 and 5 item 44; column 7 lines 5-42) and for switch mode converting a supply voltage into a linear voltage for driving a fan, wherein a voltage level of the linear voltage is a function of a pulse width modulation signal (column 8 lines 5 lines 5-58). However, Vyssotski does not disclose a thermal monitor with an output coupled to an output of the PWM generator.

Cheng discloses a DC-to-DC converter, which can be used as a drive stage, with a first transistor (Figure 1, 3 and 4 item 4) having a gate for receiving the pulse width modulation

signal and a source coupled to a first potential; a current shunting element (Figure 1, 3 and 4 item 5) having a first terminal coupled to a drain of the first transistor and a second terminal coupled to a second potential; a capacitor (Figure 1, 3 and 4 item 13) having a first terminal coupled to the second terminal of the current shunting element, and an inductor (Figure 1, 3 and 4 item 14) having a first terminal coupled to a second terminal of the capacitor and a second terminal coupled to said first terminal of said current shunting element and to the drain of the first transistor. The capacitor is coupled to the output (across) of the systems (Figure 1 item 15). However, neither Vyssotski nor Cheng disclose However, Vyssotski does not disclose a thermal monitor with an output coupled to an output of the PWM generator.

Saito discloses a driving device for variable speed motor, which includes a thermal monitor (Figure 2 items 18 and 19) with an output coupled to an output of the PWM generator (Figure 2 item 22).

It would have been obvious to one of ordinary skill in the art at the time of invention to add Saito's a driving device for variable speed motor to Vyssotski's a fan speed controller with conditioning tachometer signal and Cheng's a DC-to-DC converter. The advantage of combining the two would control a main and a fan driving motor is response to the environmental temperature of the mail motor by providing a high temperature sensor and a low temperature sensor performing specific operations.

Response to Arguments / Amendment

9. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith
Patent Examiner

Art unit 2837

A handwritten signature in black ink, appearing to read 'Marlon T. Fletcher', with a stylized, cursive script.

MARLON T. FLETCHER
PRIMARY EXAMINER